

CLAIMS LISTING

1-3. (cancelled)

4. (currently amended) The A method as claimed in of claim 1
21, CHARACTERIZED in that a total volume of the ceramic
powders to be wherein said starting powder components are
charged into the said container in an amount is set to be
not in excess of 90% of a free volume of said container in
said thereof falling on the inductor electromagnetic field
rotation zone.

5. (currently amended) The A method as claimed in of claim 1
21, CHARACTERIZED in that use is made of wherein said
ferromagnetic needles, wherein the ratio of the have a
length thereof to their diameter ratio varies of from 8 to
14.

6. (currently amended) The A method as claimed in claims 1, 2,
3 and 4 of claim 21, wherein CHARACTERIZED in that the a
ratio of a total weight of ceramic powders said starting
powdered components to the a weight of said ferromagnetic
needles is set to range from 0.3 to 3.0, predominantly from
0.5 to 2.0.

- 7.(currently amended) The A method as claimed in of claim 1
21, CHARACTERIZED in that rotation frequency of the wherein
said inductor electromagnetic field has a rotation
frequency of is set to be from 10 to 50 Hz.
- 8.(currently amended) The A method as claimed in of claim 1
21, CHARACTERIZED in that the powders wherein said starting
powdered components are ground and mixed together for 1-20
minutes.
- 9.(currently amended) The A method as claimed in of claim 8,
CHARACTERIZED in that the powders wherein said starting
powdered components are ground and mixed together in a
number of cycles for 1-10 minutes.
- 10.(currently amended) The A method as claimed in of claim 1
21, CHARACTERIZED in that all operations at the step of
preparing the molding powder are conducted in an wherein at
least said grinding and intermixing is in an inert gas
atmosphere.
- 11.(cancelled)
- 12.(currently amended) The A device as claimed in of claim 11
23, CHARACTERIZED in that the wherein said protective
chamber is filled with an inert gas atmosphere.

13.(cancelled)

14.(currently amended) The A device ~~as claimed in~~ of claim ~~11~~
~~23, CHARACTERIZED in that the housing of the protective~~
~~chamber is functionally combined with the further~~
~~comprising a load-bearing framework of the structure of~~
~~supporting~~ said device.

15.(currently amended) The A device ~~as claimed in~~ of claim ~~11~~
~~23, CHARACTERIZED in that the wherein said inductor with~~
~~the coil~~ is disposed ~~on the~~ outside of said protective
chamber.

16.(cancelled)

17.(currently amended) The A device ~~as claimed in~~ of claim ~~16~~
~~24, CHARACTERIZED in that the wherein said flanged joint is~~
separable.

18.(currently amended) The A device ~~as claimed in~~ of claim ~~16~~
~~24, CHARACTERIZED in that the wherein said valve appears as~~
~~comprises~~ a ball cock ~~provided~~ with a drive mechanism
mounted thereon for the ball cock to rotate.

19.(currently amended) The A device ~~as claimed in~~ of claim ~~16~~
~~24, CHARACTERIZED in that the wherein said flanged joint is~~

~~provided with~~ comprises a platform for the container to be
~~fixed in a stationary and positioned position.~~

20.(cancelled)

21.(new) A method for producing tablets of a ceramic nuclear
fuel comprising the steps of:

providing starting powdered components;

providing a container wherein said container is made of
non-magnetic material and wherein said container has
a cylinder-shaped working zone adapted to constantly
accommodate said ferromagnetic needles, and an end
zone wherein said working zone and said end zone are
isolated from each other by a meshed partition
impervious to said ferromagnetic needles;

charging said container with said starting powdered
components, ferromagnetic needles and non-magnetic
grinding process initiating agent wherein said
starting powdered components are charged into said
working zone through said end zone and said meshed
partition;

hermetically sealing said container;

placing said hermetically sealed container in a tube
wherein said tube is in an inductor magnetic field and
wherein said working zone is in said inductor magnetic
field;
grinding and intermixing said starting powdered component
by said ferromagnetic needles moving in said inductor
magnetic field thereby forming a powder mixture;
withdrawing said container from said tube;
cooling said container;
unsealing said container;
discharging said powder mixture into a granulation unit via
said meshed partition and said end zone without
unloading said ferromagnetic needles from said working
zone;
pressing said powder mixture into a pellet;
sintering said pellet; and
wherein said ferromagnetic needles are added at a weight of
from 2.5% to 90% of a critical mass at which said
ferromagnetic needles stop rotating in said inductor
magnetic field wherein said critical mass is
calculated by formula:

$$m_{cr}=K_{cr}V_c\rho_n$$

wherein K_{cr} is a criticality factor of loading said working zone with said ferromagnetic needles; V_c is an interior volume of said container corresponding to a height of an electromagnetic field rotation zone; ρ_n is a density of said ferromagnetic needles.

22.(new) The method of claim 6 wherein said ratio of said total weight starting of powdered components to said weight of ferromagnetic needles is 0.5 to 2.0.

23.(new) A device for preparing a molding powder of ceramic nuclear fuel comprising:
 a protective chamber comprising a circuit comprising:
 a charging unit for adding starting powdered components and a grinding process initiating agent into a container wherein said container is cylinder-shaped and made from a non-magnetic material wherein said charging unit comprises a hermetic sealer for said container wherein said starting powdered components, said grinding process initiating agent and ferromagnetic material needles are sealed in said container;
 a grinding and intermixing unit comprising:

a coil; and

a tube made from a non-magnetic material in said coil

wherein said tube receives said container and said

inductor and said tube have vertically arranged axis

and wherein said tube is blanked off at the lower end

thereof to form a fragment of said protective chamber;

a granulation unit; and

a container conveying and positioning system for moving

said container through said circuit and into and out

of said tube vertically along a tube axis and wherein

said container is adapted to perform circular motion

over said circuit from said charging unit towards said

grinding and intermixing unit then to said granulation

unit and again to said charging unit and for tipping

over said container to discharge contents of said

container in said granulation unit; and

wherein said protective chamber is provided with a

conveying box for withdrawing said container from said

protective chamber.

24.(new) A container comprising:

a cylinder-shaped area made from a non-magnetic material;

a sealing unit at one end of said container;

a hermetic sealing unit comprising a valve having an interior space separated from said cylinder-shaped area by a transversal meshed partition which is impervious to ferromagnetic needles and wherein said valve is connected to said cylinder-shaped area by a flanged joint; and

wherein said container comprises a working zone on its inner side and said working zone has a chamfered junction to a flat bottom thereof.